

# **\*\*ATTENTION\*\***

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Washington  
Department of Wildlife  
600 Capitol Way N  
Olympia, WA 98501-1091

# Implementation Plan for Control of Purple Loosestrife

## Purple Loosestrife Oversight Committee

Washington Department of Wildlife • Washington Department of Agriculture • State and county noxious weed control boards • Audubon Society • Federal Bureau of Reclamation • Office of Financial Management • South Columbia Basin Irrigation District • Washington Department of Ecology • Washington State University

## Legislative History

Funding and direction for a two-year purple loosestrife control effort was provided in SSB 6407, the Supplemental Budget passed by the 1990 Washington State Legislature.

## Purple Loosestrife Natural History

Purple loosestrife is an aquatic weed that is spreading in Northwest wetlands with alarming speed. The hardy exotic, introduced to this country's eastern seaboard from Europe in the early 1800s, can cover a marsh in one growing season. Although found primarily in wetlands, loosestrife will grow in most wet soils, and is particularly invasive in disturbed wetlands, irrigation canals, roadside ditches and wet pastures.

Purple loosestrife looks like fireweed, blue vervain, Douglas spirea and foxglove. The parent plant sends up multiple stems from a crown supported by a dense, woody, fibrous root system covered with irregularly placed buds. The stems are four- to eight-sided, two- to 12-feet tall, woody, and do not decompose until two seasons after dieback. Leaves are lance shaped, furry to smooth, and are arranged in an opposite, alternate or whorled pattern. Loosestrife blooms July to August with flowers on a spike that can be two inches to three feet tall. The most common color is magenta, although colors range from white to pink to deep purple and even red. The erect perennial crowds out wildlife-supporting native vegetation like cattails and bulrushes while offering no substitute value to wetlands wildlife.

Songbirds don't eat the loosestrife's small hard seed; muskrats can't build houses out of loosestrife. The weed is too compact to offer usable cover to wildlife. Waterfowl—especially ducks—avoid wetlands where loosestrife has filled open and shallow areas.

Purple loosestrife has an impact on the state's economics as well as on the state's wildlife. The weed reduces habitat values, increases the cost of cleaning irrigation channels, impedes bank fishing and can reduce other wildlife-related recreational opportunities.

Once established, loosestrife is difficult to control. The root system forms a dense mat, making the plant hard to pull, and when mowed, stem pieces send out new roots to create new colonies. In a single

season, flower spikes can produce 120,000 seeds the size of finely ground pepper. Whole plants can produce over one million seeds which remain viable for years and may germinate suddenly during a dry summer.

Loosestrife is widely distributed in the northeastern United States and has spread across the northern states and into Canada. It was first documented in Washington in 1933 and has now spread to 20 counties. The weed appears to be spreading in the Columbia Basin faster than elsewhere in the state. Over 20,000 acres of loosestrife infestation has been reported in a 55,000-acre area of Grant County.

## **The 1990-91 Purple Loosestrife Pilot Plan**

The 1990-91 plan consists of a multi-agency two year program with four major components: weed control, infestation inventory, coordinated research and public education.

### **Control First Year**

Control efforts for 1990 will focus primarily on two priority areas in the Columbia Basin—Grant and Yakima counties. The objective of the 1990 control program is to use a variety of herbicide application techniques and manual removal to determine which control methods are most appropriate for heavy infestations, scattered infestations and "pioneer" loosestrife populations. Work will take place when loosestrife is most vulnerable to the specific control technique selected for each site. Although control efforts will reduce loosestrife over significant acreage, direct application of herbicide will be targeted on about 150 acres which will include about 75 miles of shoreline.

#### **Priorities:**

- |    |  |                 |
|----|--|-----------------|
| 1) | <b>North Potholes</b> - use inmate labor, hand-cut stems, remove seed heads and sponge-apply herbicide   | \$9,000         |
| 2) | <b>Lower Crab Creek and adjacent areas</b> - backpack herbicide spray except in the Natural Area Preserve where hand-cut/sponge technique will be used-WDW and WCC labor | 7,000           |
| 3) | <b>Quincy Lakes</b> - hand-spray from boat and backpack-contract labor   | 19,000          |
| 4) | <b>Quincy Farm Unit</b> - backpack application-contract labor  | 4,000           |
| 5) | <b>Naches/Yakima, and other western "hot spots"</b> -hand pull plants treated last year-WDW and WCC crews  | 15,000          |
| 6) | <b>Winchester Wasteway/Dodson Rd.</b> - outliers, experimental plots (herbicide, plastic, burns, mowing, livestock, grass carp, etc.)                                    | 10,500          |
|    | <b>TOTAL (First Year)</b>  | <b>\$65,000</b> |

#### **Second Year**

Follow-up treatments (different techniques)	\$40,000	0.25 WCC
New sites based on inventory	20,000	
TOTAL (second year)	\$60,000	0.25
TOTAL (both years)	\$125,000	0.25

## Inventory

Although some individual sites have been marked on maps, no comprehensive statewide map of purple loosestrife occurrences and densities exists because of the rapid spread of the plant and lack of a coordinated statewide inventory program. During 1990, inventory activities will include aerial photo-reconnaissance (provided by the Washington Department of Transportation) in a variety of types of loosestrife infestation. Results of the aerial photography survey will be digitized into a statewide geographical information system. This database will enable state, federal and local agencies to update the inventory as new infestations are discovered and monitor the effects of control programs on existing infestations. The first overflights were made during the last week of July. Subsequent flights will occur during maximum bloom; photo analysis and digitizing will continue through summer and fall.

Priorities	Budget	FTE
1) Pilot project - Dodson Road/Winchester Wasteway and No. Potholes	\$8,700	0.1 Blo
2) Lower Crab Creek, Quincy	16,500	0.2 Blo
3) Naches and Yakima Rivers	10,000	0.1 Blo
4) Western Washington and "hot spots"	10,000	0.1 Blo
Coordinate/evaluate inventory	7,8000	.25 Blo *
TOTAL	\$53,000	0.75

\* plus WCC crew.

## Applied Research/ Monitoring

Objectives of the research component of the program focus on monitoring the effectiveness of this 1990 control efforts on vegetation, examination of loosestrife seed viability, monitoring chemical residue in soil and water and encouraging academic research into loosestrife effects on wetland use by wildlife. A grant will be made to the ongoing biological control efforts in Europe.

First Year

Biological Control - match SNWCB grant to ongoing research	\$25,000	
Select from 15 proposed projects; visit all treatment sites for data collection	18,500	0.5 Bio
<b>Second year</b> monitoring of treatment sites	8,500	0.25 Bio *
<b>TOTAL</b>	<b>\$52,000</b>	<b>0.75</b>

\* plus WCC crew.

## Public Education

**The public does not understand the threat posed by purple loosestrife.** This year's education efforts will focus on creating educational materials that can be used by extension services and other existing public education programs. The education task group represents state and local agencies. Care has been taken to compliment efforts of local weed control boards and to create products that characterize the unique impacts of loosestrife to Washington wetlands and waterways.

Brochure - public involvement (10-20,000)	\$8,000
Fact sheet - self-help, biological control	2,000
Signs to identify treatment sites	1,500
Slide-show/video support	3,500
Annual report to the legislature	1,500
Model community involvement project	3,500
<b>TOTAL</b>	<b>\$20,000</b>

## Program Evaluation and Report

A summary and evaluation of activities will be published in January, 1991.